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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/760,487	01/21/2004	Peter Randall	71048.0168	9790

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EXAMINER	
WRIGHT, ANDREW D	

ART UNIT	PAPER NUMBER
3617	

DATE MAILED: 11/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/760,487	RANDALL, PETER	
	Examiner	Art Unit	
	Andrew Wright	3617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 August 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *14 and 16-50* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *14,16-25 and 50* is/are allowed.

6)☒ Claim(s) *26-36 and 40-46* is/are rejected.

7)☒ Claim(s) *37-39 and 47-49* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/26/05 has been entered.

Claim Objections

2. Claim 48 is objected to. Claim 48 recites "said second disinfection unit". This recitation lacks antecedent basis in the claims. It will be assumed that claim 48 depends from claim 47 instead of claim 46. Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim 26, 29, 32-36, 40, 41, 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Husain et al. (Us 6,361,695) in view of Tyllila (US 6,638,420), Wipperman (US 6,672,233), Leffler et al. (US 2004/0099608), and Perlich et al. (US 6,773,611). Husain discloses a shipboard wastewater treatment system that uses collection tank (6), treatment via filtering in a bioreactor (30), treatment via

decontamination using UV light in disinfection unit (70), and recirculation of treated wastewater. Husain discloses storing the treated wastewater in sump tank (80), then dumping it as treated effluent. Tyllila teaches that there are times when treated wastewater can be discharged directly to the sea or other receiving facility and no temporary storage tank is required (column 1, lines 35-40 and column 3, lines 57-59). Tyllila also teaches that sometimes the treated wastewater cannot be immediately discharged and a temporary storage tank is needed (column 4, lines 8-11). Tyllila does not place any criticality upon the storage tank, and teaches that it can be at some other location on the vessel (column 1, lines 35-40). Wipperman teaches that ballast tanks that normally hold drinking water or sea water can also be used to hold waste water (column 6, lines 50-52). Based upon the teaching of Tyllila and Wipperman, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Husain by sending the treated waste water from sump tank (80) to a ballast tank. The motivation would be to store treated wastewater until it can be properly discharged. There is necessarily some structure that the water passes through when it is discharged from the ballast tank. This structure constitutes a discharge unit.

5. Still regarding claim 26, Husain in view of Tyllila and Wipperman does not explicitly teach the recited method steps. The method steps, however, are inherent in the use of the modified system. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to devise the recited method steps. The motivation would be to make and use the modified Husain system.

6. Still regarding claim 26, Husain teaches that the treated waste water can be recirculated if too high a concentration remains. Husain doesn't explicitly refer to testing or monitoring, and doesn't explicitly refer to predetermined regulatory standards. However, one must either test or monitor the effluent to be able to know if concentrations are too high. And what is and isn't too high must necessarily be defined somewhere. Perlich discloses a ballast water treatment system for a ship. Perlich discloses a monitoring device can be used to determine of the treatment has brought the treated water within applicable regulatory standards. Leffler discloses a ballast water treatment system for a ship. Leffler discloses that treated water may be tested to determine if the concentration is below a predetermined threshold. Leffler teaches that the treated water may be recirculated and passed back through the treatment system again if the concentration is too high. So it is well known and common to test and monitor ship-borne treated water to see if certain concentration thresholds are met before discharging the water overboard. Husain alludes as much, but does not explicitly state it. Perlich and Leffler do. Therefore, it would have been obvious to treat the waste water to meet predetermined regulatory standards. The motivation would be to comply with local, state, and/or federal laws and regulations.

7. Claims 27, 30, 31, 41, 44, and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Husain in view of Tyllila, Wipperman, Leffler and Perlich as applied to claim 26 above, and further in view of Tompkins et al. (US 5,932,091). Husain discloses recirulation of treated waste water. Husain does not disclose testing and re-treating based upon test results. Leffler discloses testing and recirculation based upon

the results. Tompkins shows a shipboard wastewater treatment system. The system treats wastewater by filtration. After the treatment, the effluent is monitored for contaminant levels. If the contaminant level is above a certain amount, the effluent is diverted back to the beginning for re-treatment. This is common and well known in the art. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify Husain by adding testing and conditional re-treatment if the treated wastewater does not meet predetermined thresholds. The motivation would be to ensure that the wastewater is properly treated and in compliance with applicable laws and regulations before it is dumped. It is well known and common to take samples for the purpose of testing. It is obvious to treat according to laws and regulations if such exist.

8. Husain in view of Tyllila, Wipperman, Leffler, Perlich, and Tompkins, as described above, contains the structural elements of claims 44-46. Husain discloses a disinfection unit (70). Tompkins discloses a monitoring unit for testing treated wastewater. Husain discloses the use of pumps and a pump would be necessary for the recirculation. The ship will necessarily have some type of seawater ballast system, whether it be ballast tanks and pumps or a simple bilge. Tompkins discloses monitoring and sensing, and a sensor or monitor necessarily requires some port for obtaining or sensing a sample. Husain discloses ultraviolet treatment.

9. Claims 28 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Husain in view of Tyllila, Wipperman, Leffler and Perlich as applied to claim 26 above, and further in view of Yuri et al. (US 2004/0026336). Husain in view of Tyllila,

Wipperman, Leffler and Perlich disclose testing and monitoring. None disclose a turbidity monitor. Yuir discloses the use of a turbidity sensor with a boat water treatment system. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify Husain by using a turbidity monitor. The motivation would be to use sensors and monitors that are known in the art.

Allowable Subject Matter

10. Claims 14,16-25, and 50 are allowed.

11. Claims 37-39 and 47-49 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

12. Applicant's arguments with respect to claims 26-49 have been considered but are moot in view of the new ground(s) of rejection.

13. Applicant's arguments will be addressed for the purpose of advancing prosecution. Applicant first argues that Husain does not treat the wastewater (Remarks of 7/26/05, page 15). This is not persuasive. Oxygenation is a form of treatment.

14. Applicant argues that Tyllila is non-analgous to ship-based water treatment (Remarks, page 15). This is not persuasive. Tyllila explicitly states that the apparatus is for use on marine vessels (column 1, lines 5-40).

15. Applicant argues that none disclose using a ballast tank to store the water (remarks, page 15). This is not persuasive. Any water tank aboard a vessel can be

considered to constitute a ballast tank. A ballast tank, in a broad sense, is merely a reservoir that holds a fluidisable substance aboard a ship. The claims do not place any further restriction upon the term "ballast tank". In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Eidem (US 2003/0015481) shows a method and apparatus for treating a ship's ballast water.

17. Any inquiry concerning this communication should be directed to examiner Andrew D. Wright at telephone number 571-272-6690. The examiner can normally be reached Monday-Friday from 9:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, S. Joe Morano, can be reached at 571-272-6684. **The Central FAX Number for official communications is 571-273-8300.** The fax number directly to the examiner for unofficial communications is 571-273-6690.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Andrew D. Wright
Patent Examiner
Art Unit 3617

11/9/05